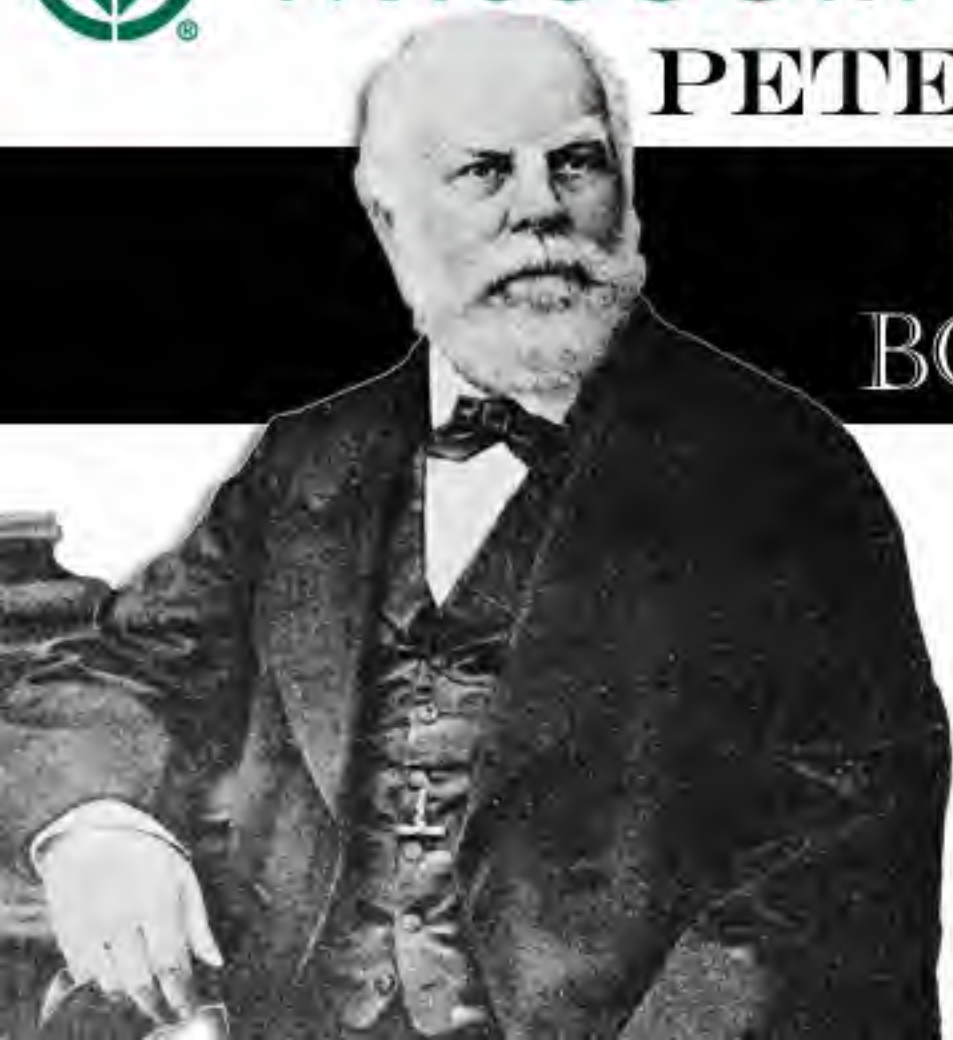


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*Pinus australis*

March 21 1871

Colleston S.C. & Mollerhamp March 13 1871

Pollen



33 - 36.6

415

mean

34.5

mm

415

0.026 - 0.040 lin



upper

side

lower

not yet fully open



lateral lateral scales  
 $\frac{1}{3}$  or  $\frac{1}{4}$  of the length  
of the involucres



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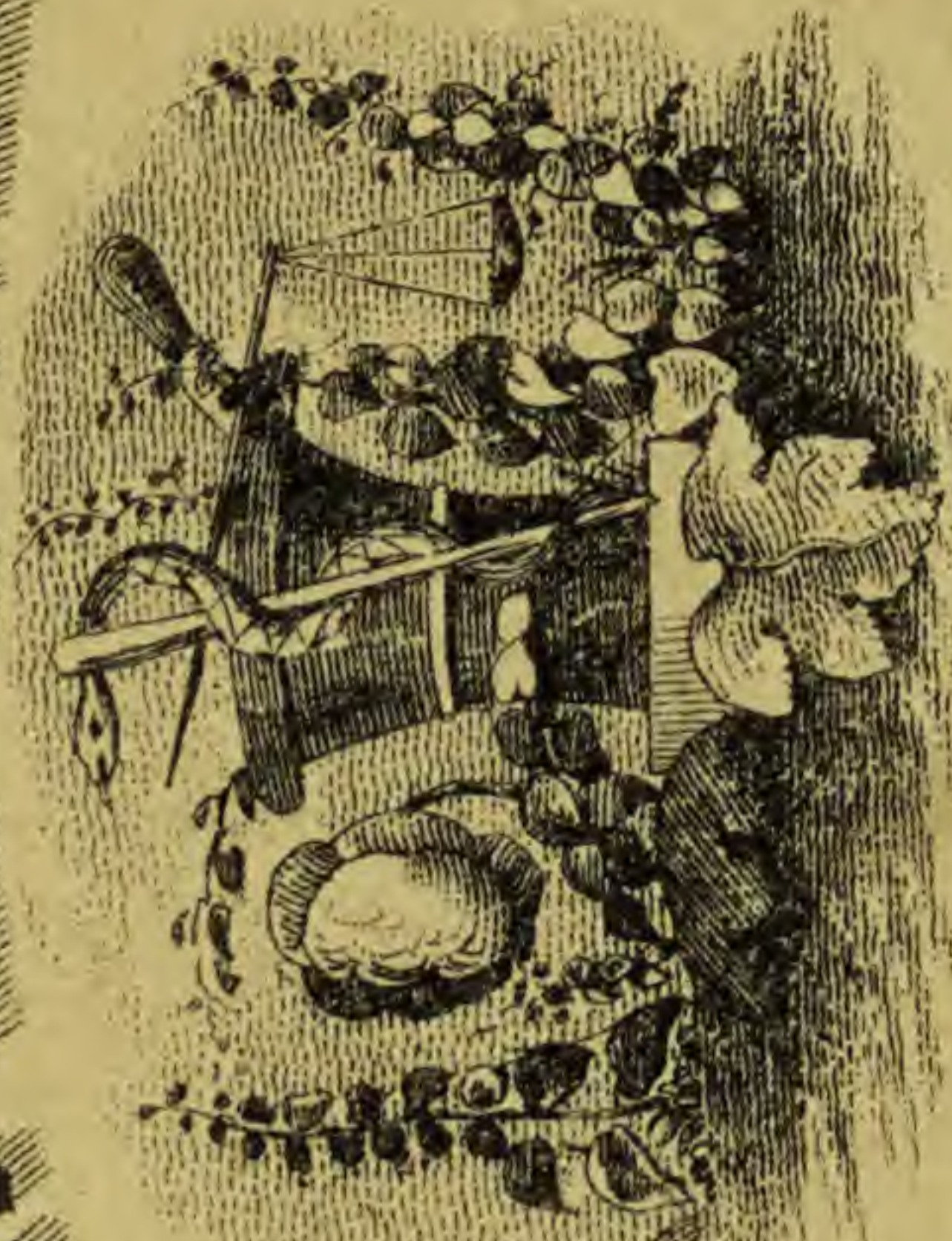


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Apothecaries &

Pharmacentists.

S.W. CORNER OF TWELFTH & OLIVE STREETS,

ST LOUIS, MO

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*Pisum arvense*

April 15 1871

from So. Can., Ravenna, Ohio 1866

outer lateral sepals ~~obovate~~ <sup>on both sides</sup>  
~~outermost~~ <sup>outermost</sup> ~~shorter than~~ <sup>overlapping</sup>  
~~the inner one~~ <sup>the inner one</sup>, and smaller.



Involucrum  
 of male ament  
 on leaf.

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Druggists

South West  
Corner Fifth  
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*Pinus australis*  
S. Carol

Oct 13 1875

x 30

x 60

upper end



teeth  $\frac{1 \text{ mm long}}{80}$   
10 mm distant  
 $\frac{60}{60}$

0.016  
0.166

lower end  
of leaf



new tip



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APOTHECARY AND CHEMIST,

Marble Building, Cor. Fourth and Olive Streets,

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5<sup>th</sup>

66

*P. occidentalis*

343-7



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*Pinus verruculata*

April 6 1871

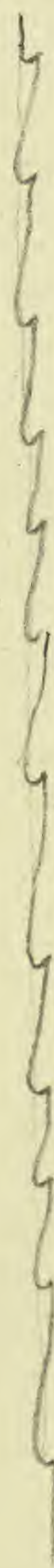
St Domingo, Poiteau,

Hb. Acad. Philadelph

x30



x30



x60



x30



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GEORGE ENGELMANN PAPERS  
VOLUME 1  
PAGES 1-100



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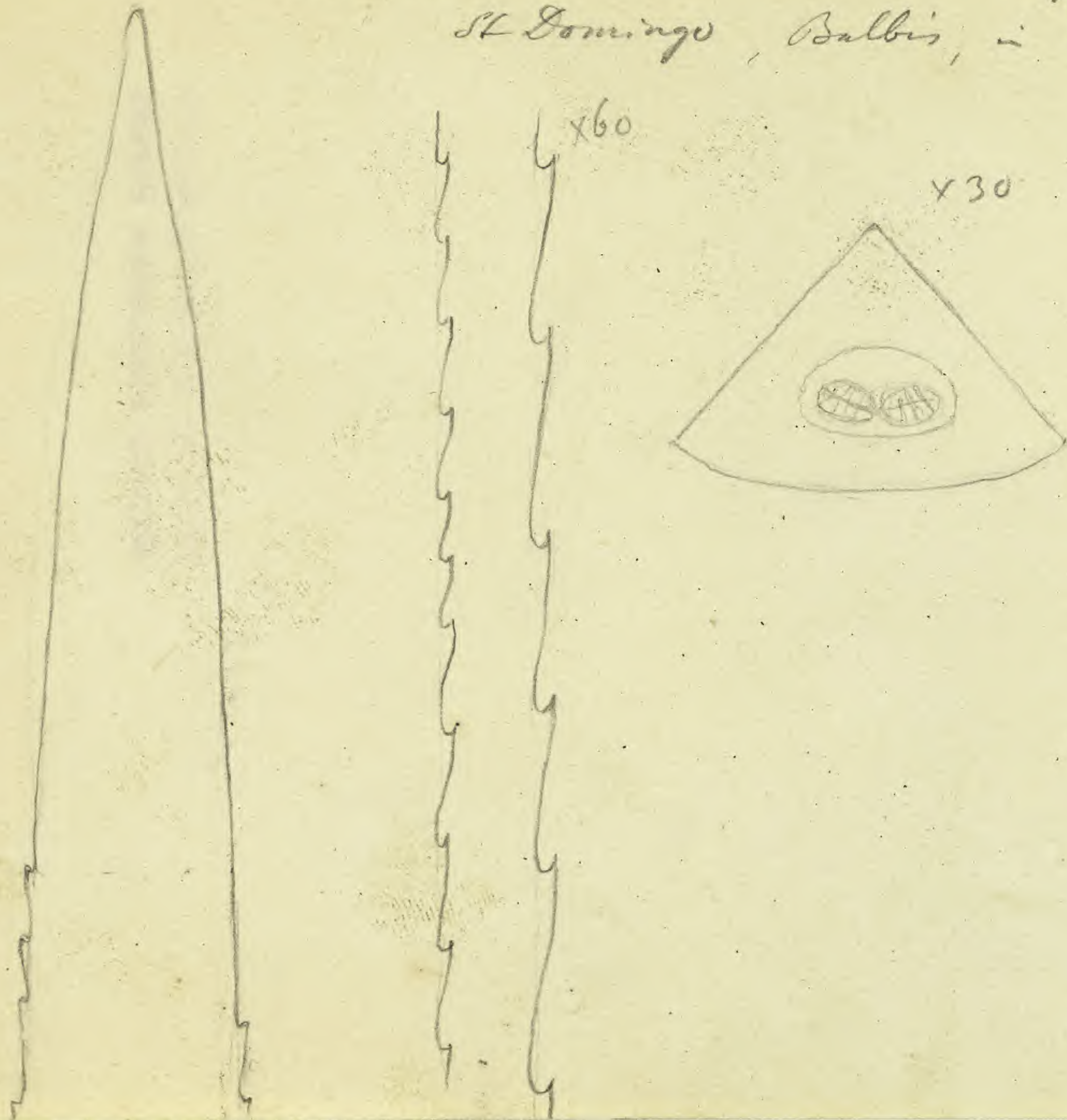
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*P. occidentalis*

April 6 1871

St Domingo, Balbis, in Hb. Berlin



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**DRUGGISTS**

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*Pinus occidentalis* Sw  
San Domingo & Parry

April 30 1878

x 30

foliifera



x 30

x 60



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*P. occidentalis*

May 2<sup>d</sup> 1872

5-leaved

San Domingo

Dr Parry

leaf 1<sup>mm</sup> wide

x30



hypoderm on the angles  
and in bundles along  
the edges

preparation not quite clear

3<sup>d</sup> vascular duct certainly

in parenchyma

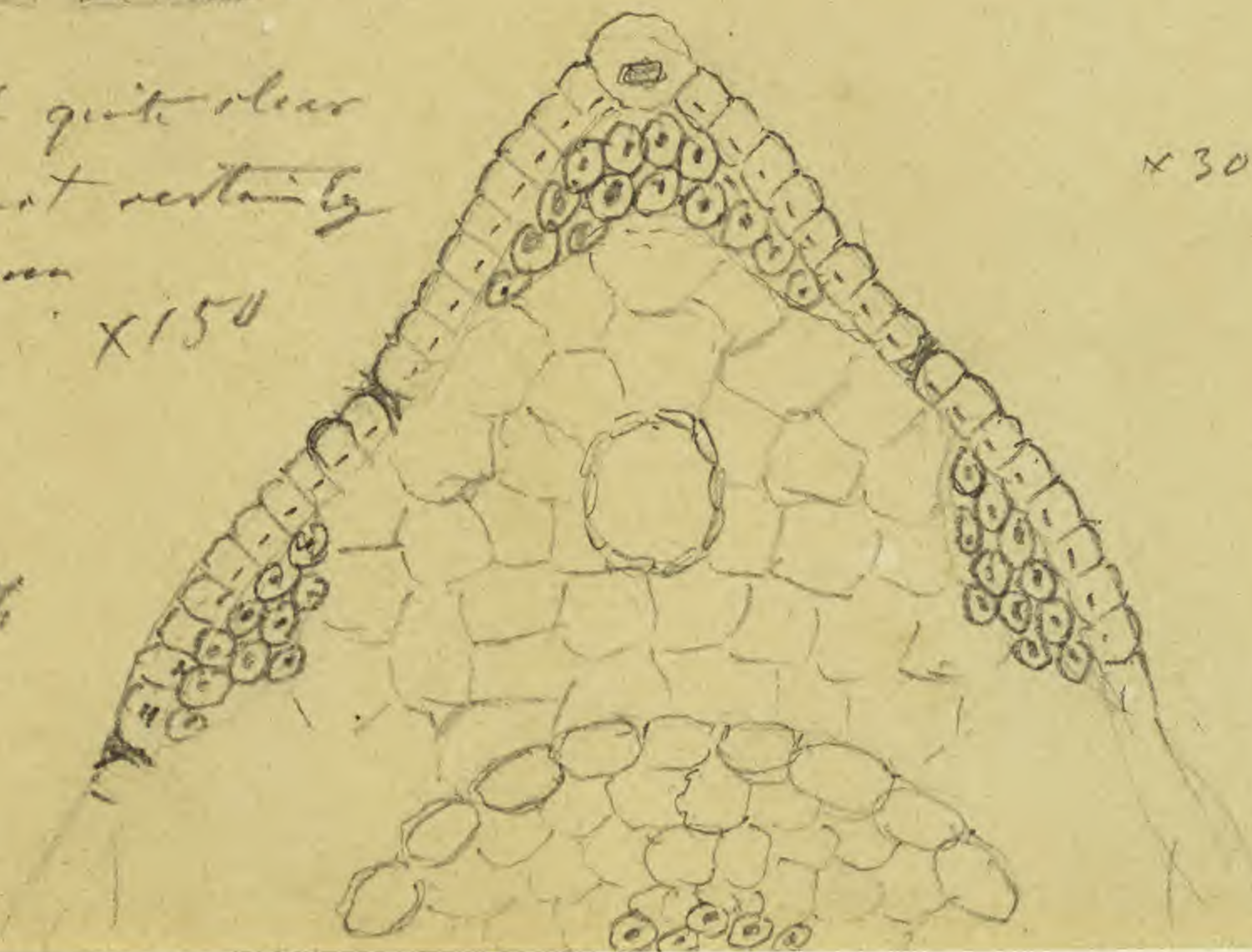
x150

2 primary

latent ones

apparently

close to sheath



x30

x60



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leaves 1.2 mm wide  
 9-10 inch long  
 Sierra Madre  
 sheath somewhat deciduous

"*Mus patula*"?

Seemann 1961

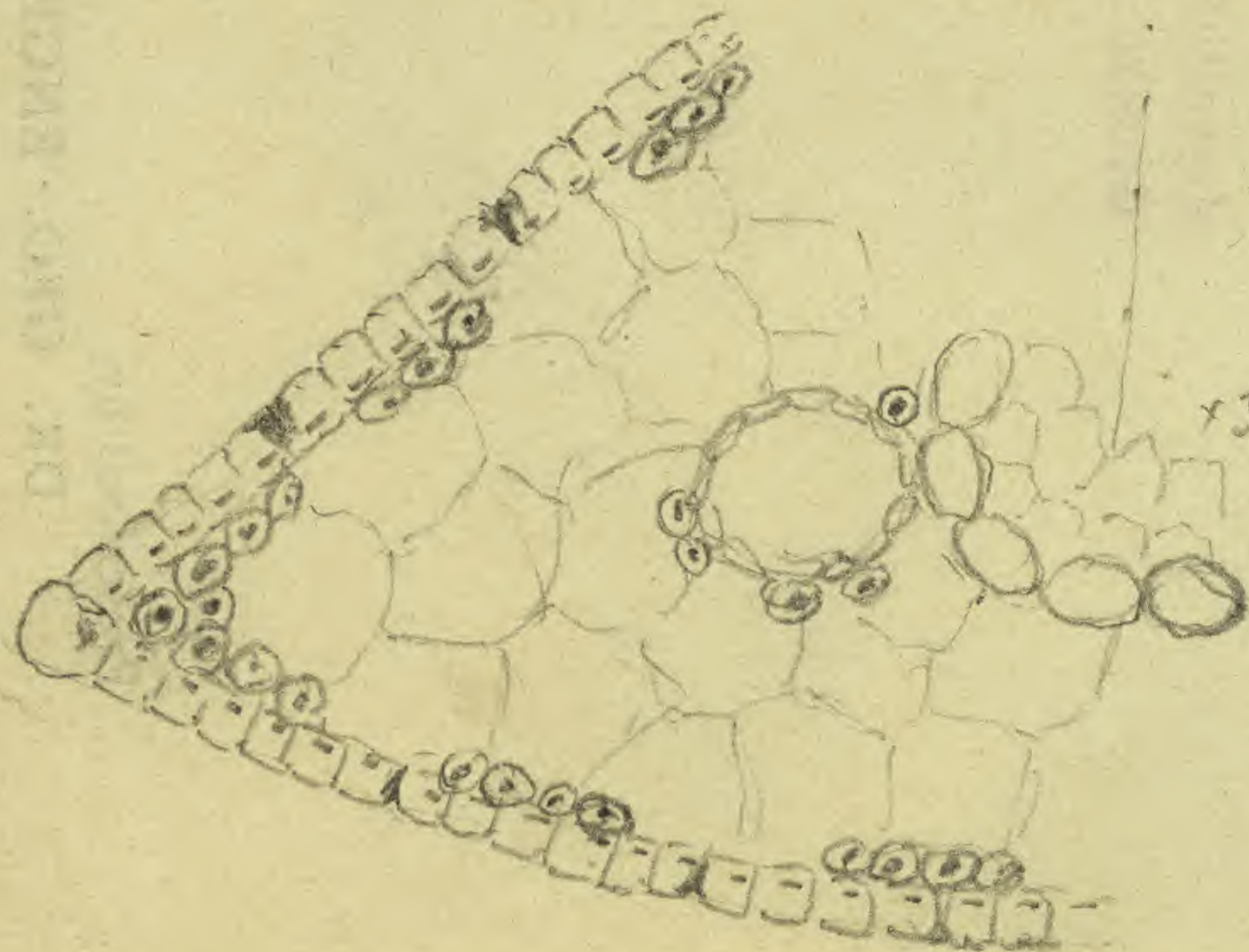
- Hb Kew

May 16 1878

= occidentalis



x20



x30

x60

Ducts two, close  
 to sheath,  
 rarely a 3<sup>rd</sup> one  
 a few hypodermis cells,  
 around them, or  
 none  
 hypodermis within sheath  
 and all around leaf  
 in small interrupted  
 groups



0 1 2 3 4 5 6 7 8 9 10

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Near Garrison Av. St. Louis.

**Prescription Store,**

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GEORGE ENGELMANN PAPERS

Prescribed by  
DR. GEO. ENGELMANN,  
N. W. Cor. Garrison Ave. & Locust St.,





16 Feb

68

*P. Elliottii*

351 bis 359



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*Pine Elliptica*

May 1<sup>st</sup> 1871

Bluffton S.C.



different leaves x4



Missouri Botanical Garden  
Herbarium  
J. H. R. & Co. Inc.



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Druggists

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*Pianus Elliottii*

May 21 1871

St John's Florida

Wm M Canby

1869

Pollen unduly

leaves 6" long

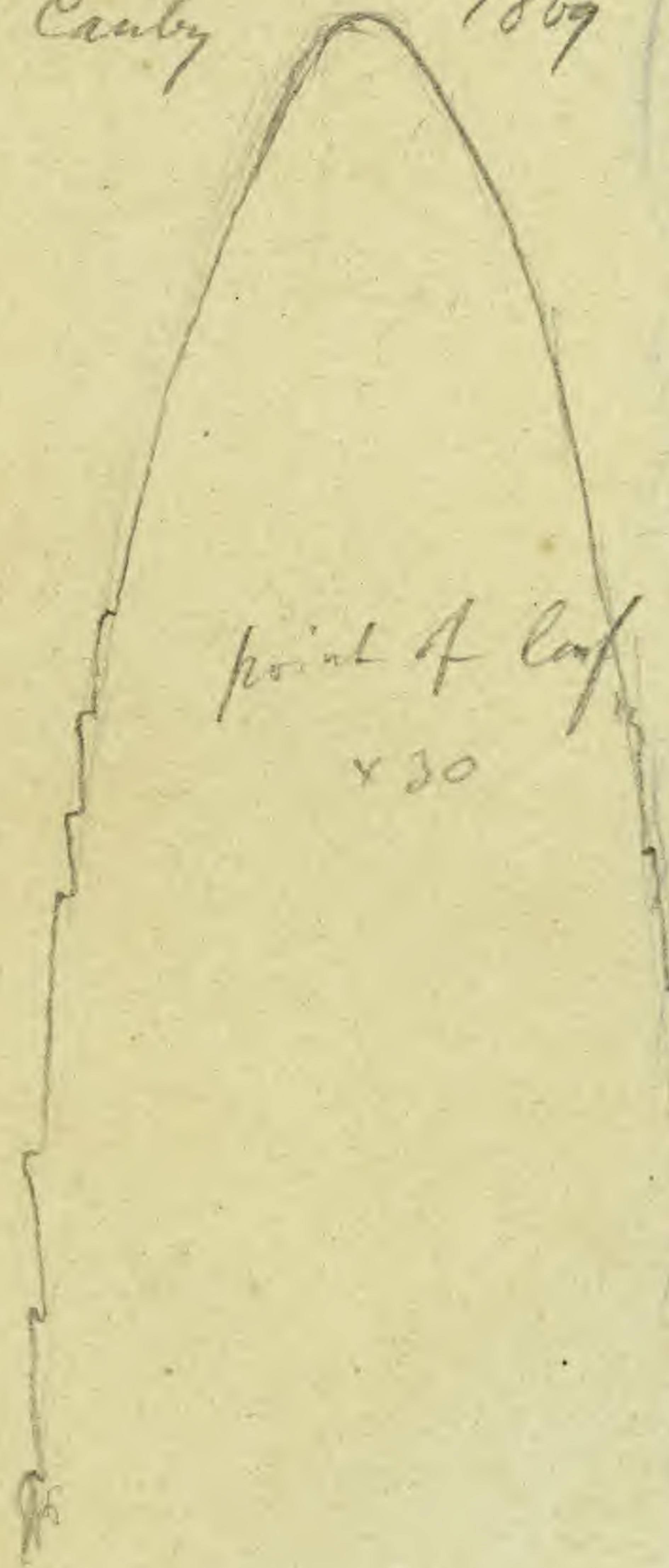
x4



x4



point of leaf  
x30



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6 kb

67

*P. oocarpa*

348-353



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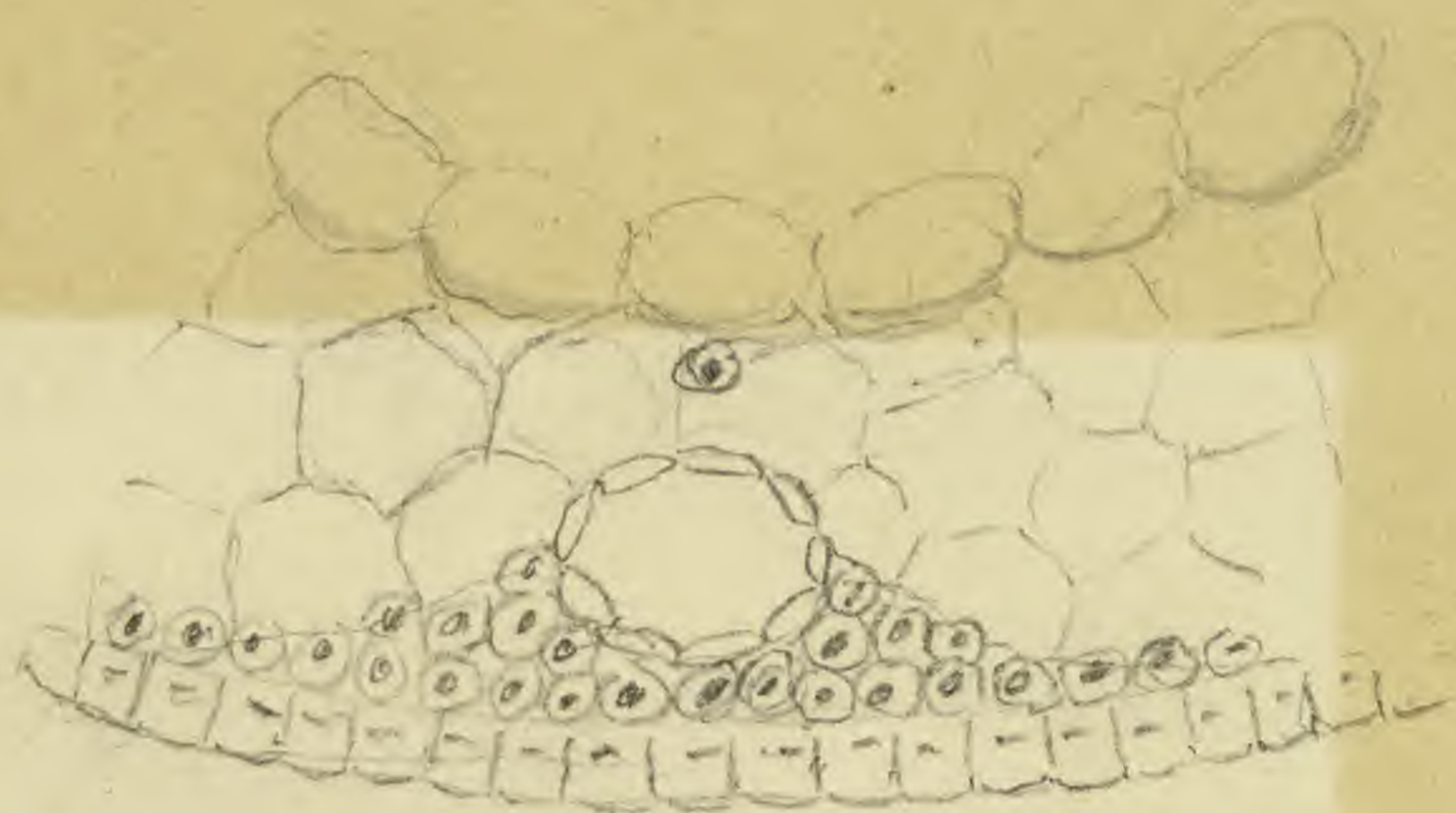


"*Pinus oocarpa*"

April 30 1878

Mexico Ehrenberg Coll Berlin 644

x 30



Dorsal duct separated from epidermis  
by hypoderm cells only  
one or two smaller lateral ducts in  
same position



x 30



x 60

Don't belong  
here



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*P. ovata*

May 29 1878

Albida

Mexico No. 560

x 30



hypoderm strong in corners  
bundles along sides,  
some within sheath  
no ducts seen



x 60



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cm

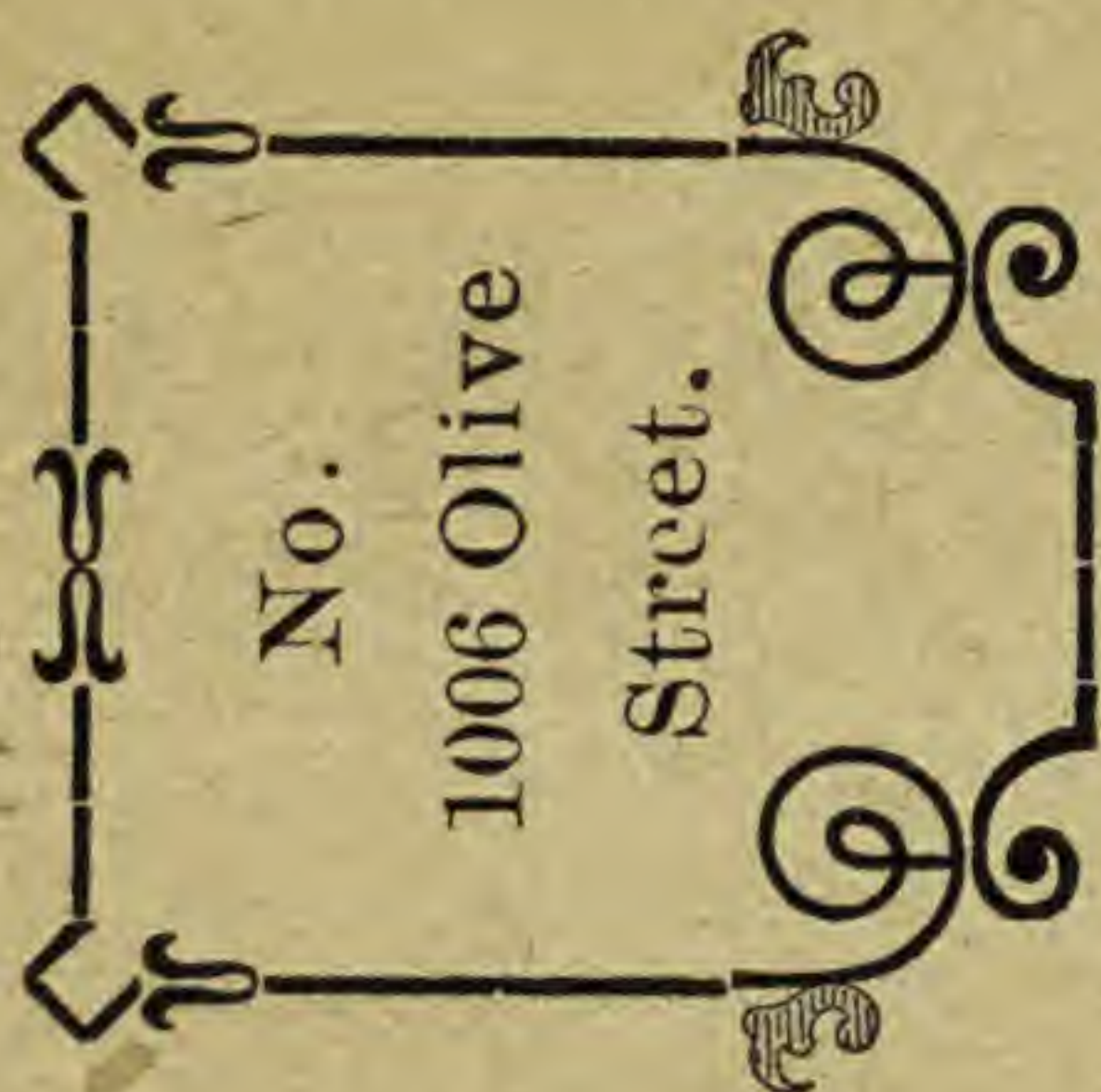
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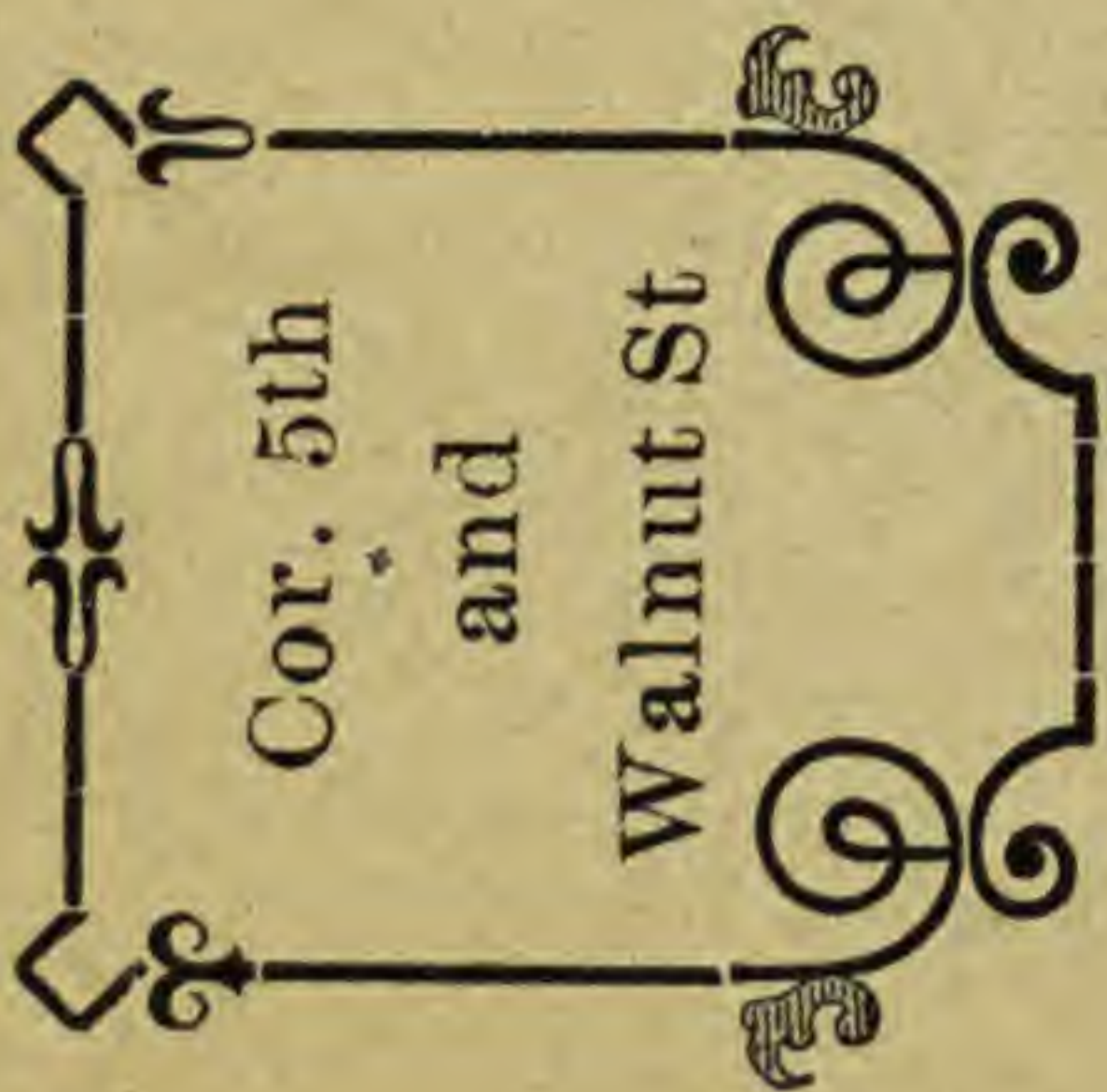
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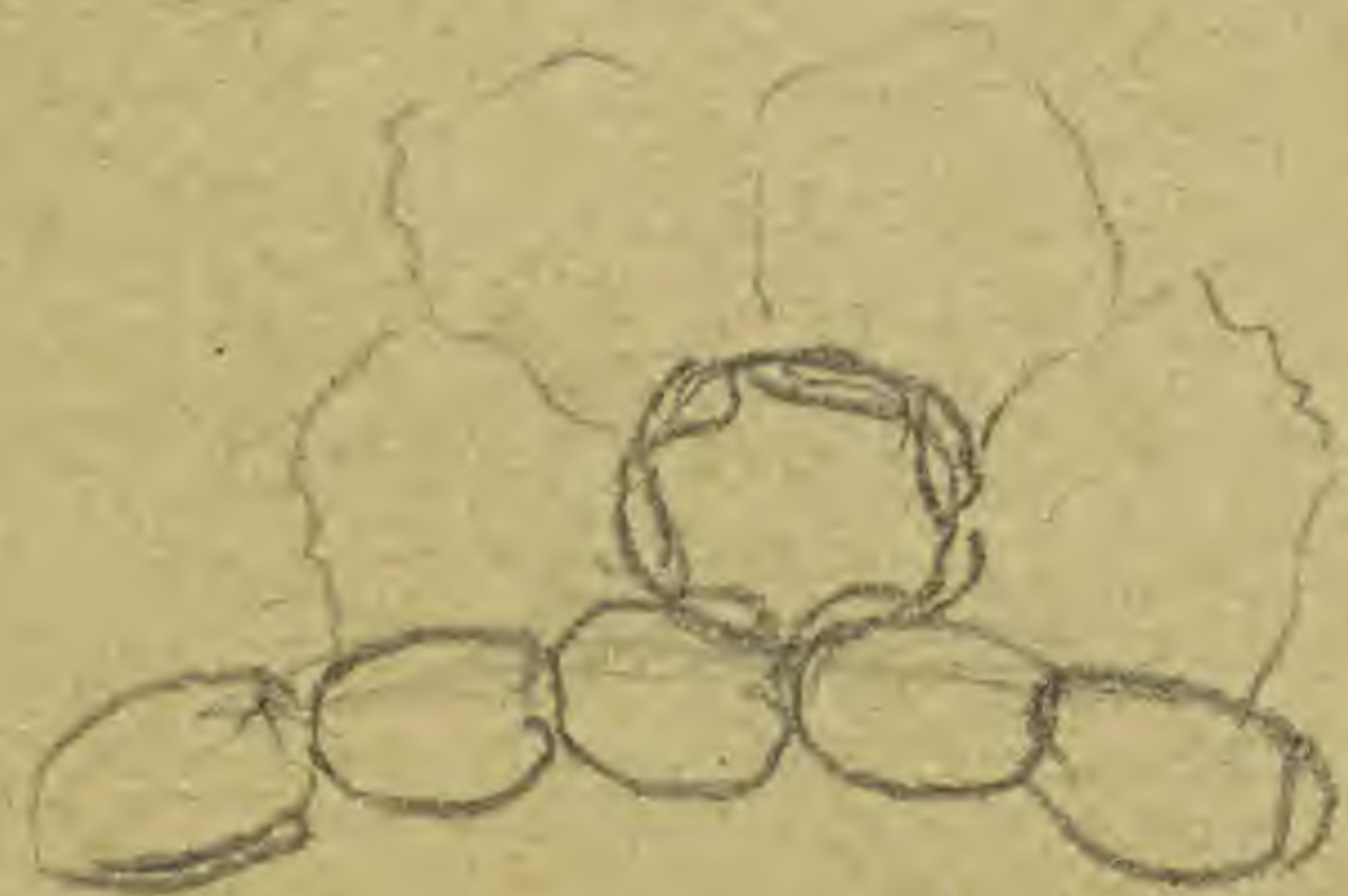
*P. ovata*  
Liebman No 10

May 29 1878

x 30



2 interior ducts,  
often only the ventral one  
very little hypoderm



ventral duct  
on sheath, x 150

x 60



0 1 2 3 4 5 6 7 8 9 10

cm

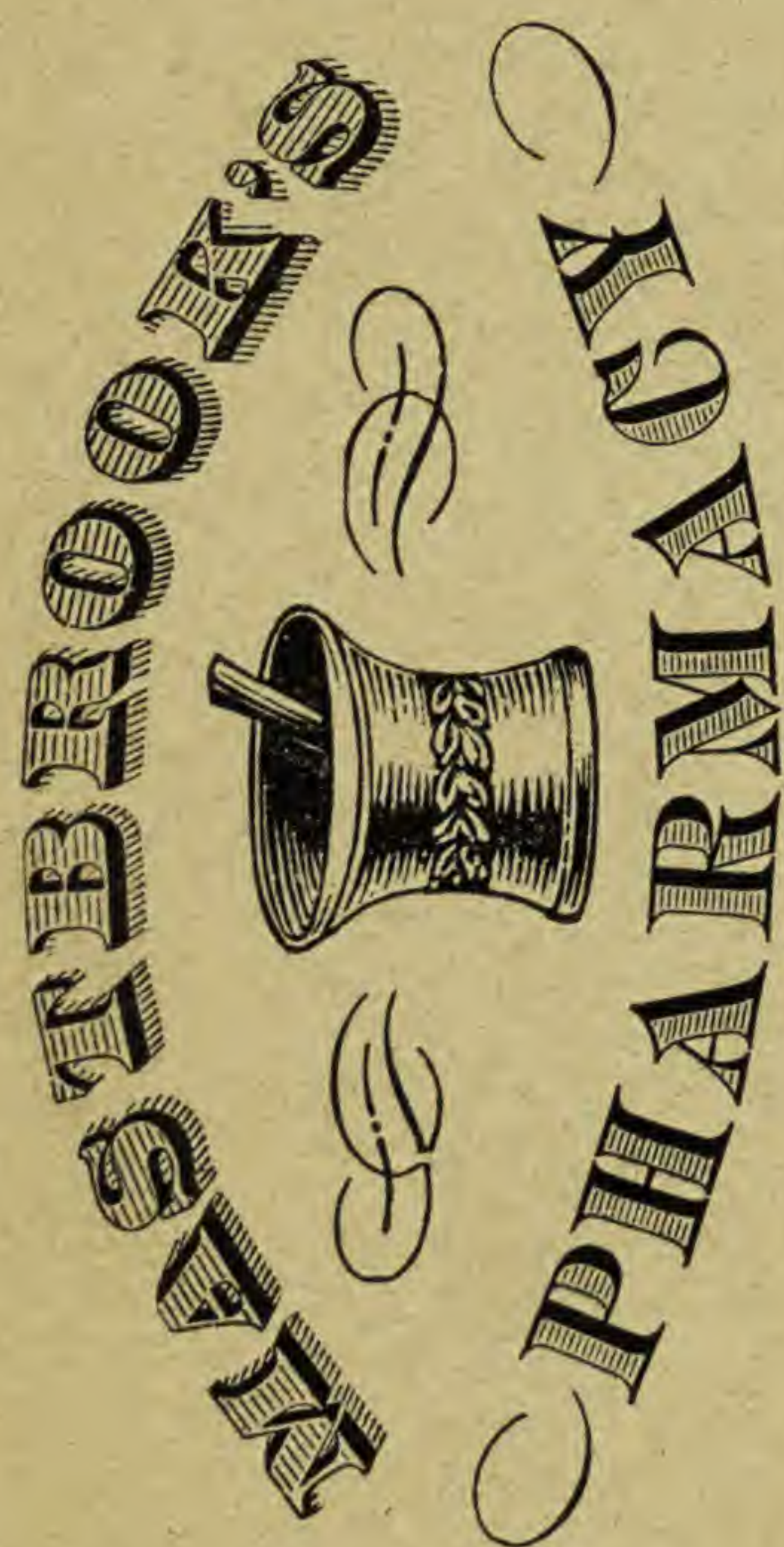
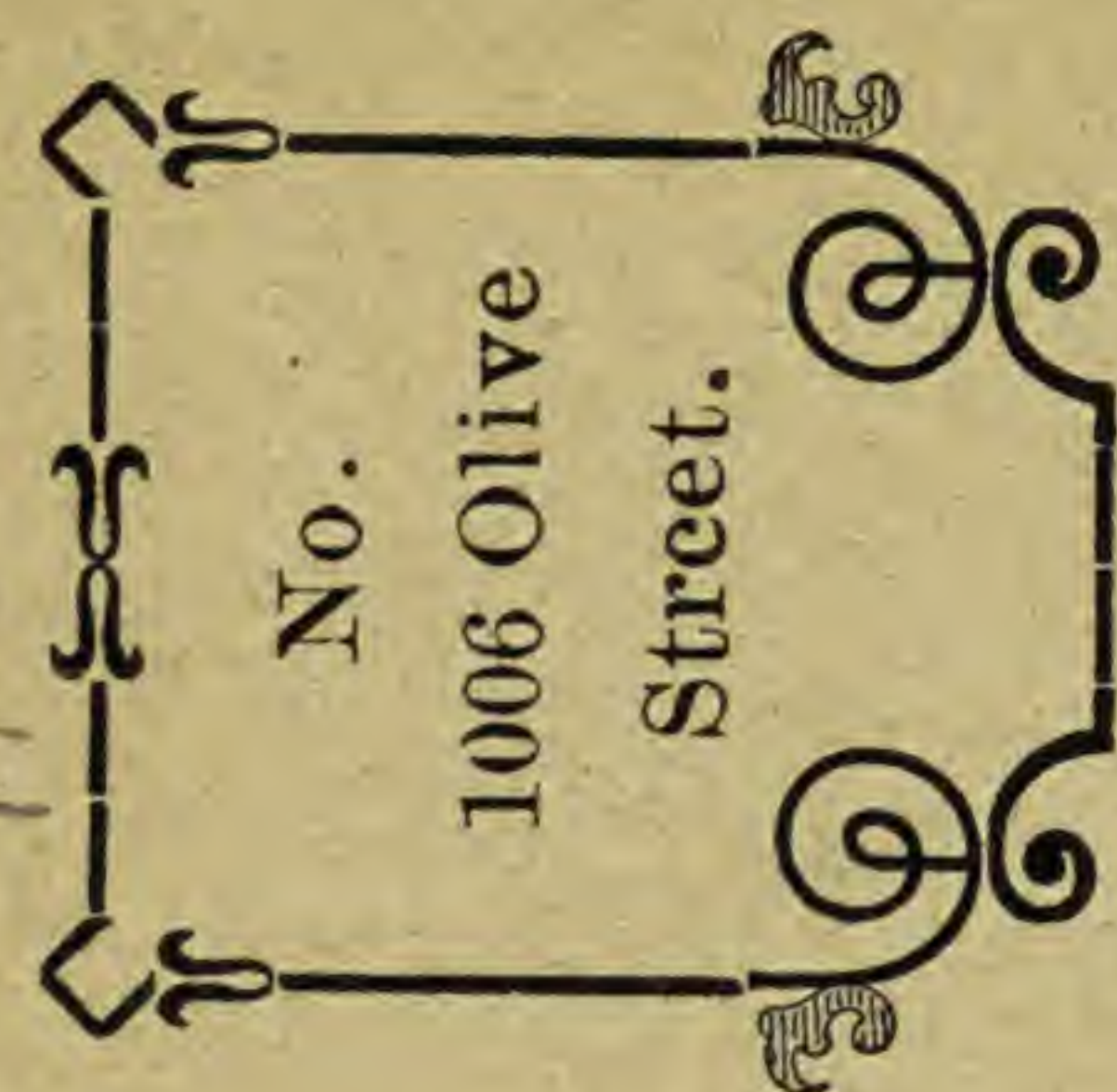
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*P. poran*

May 30 1878

Libocoma No. 4

x 30



I can discover no ducts  
hypodermis in bundles, and  
within sheath



x 60



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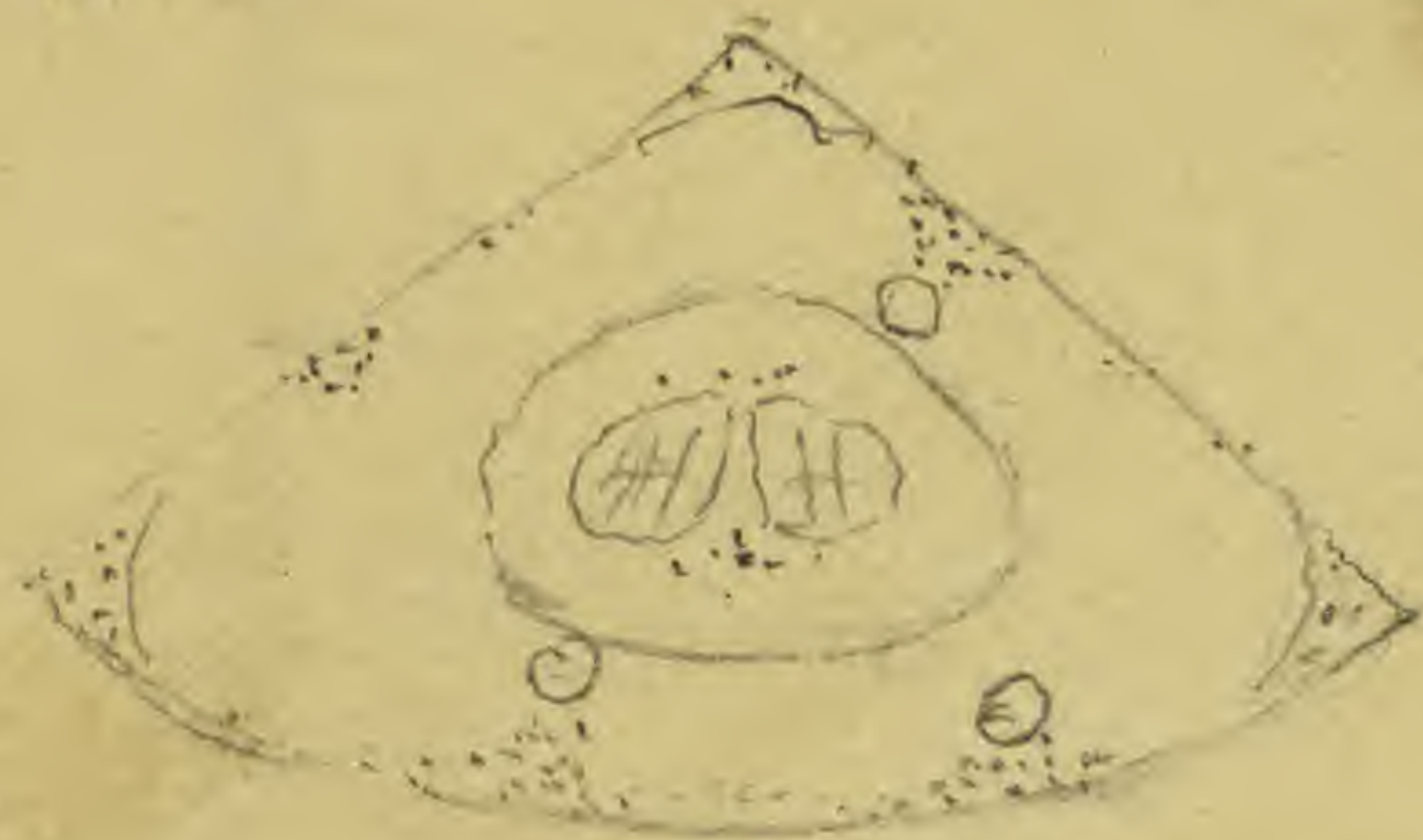


*P. ovata*

May 30 1878

Rozgl

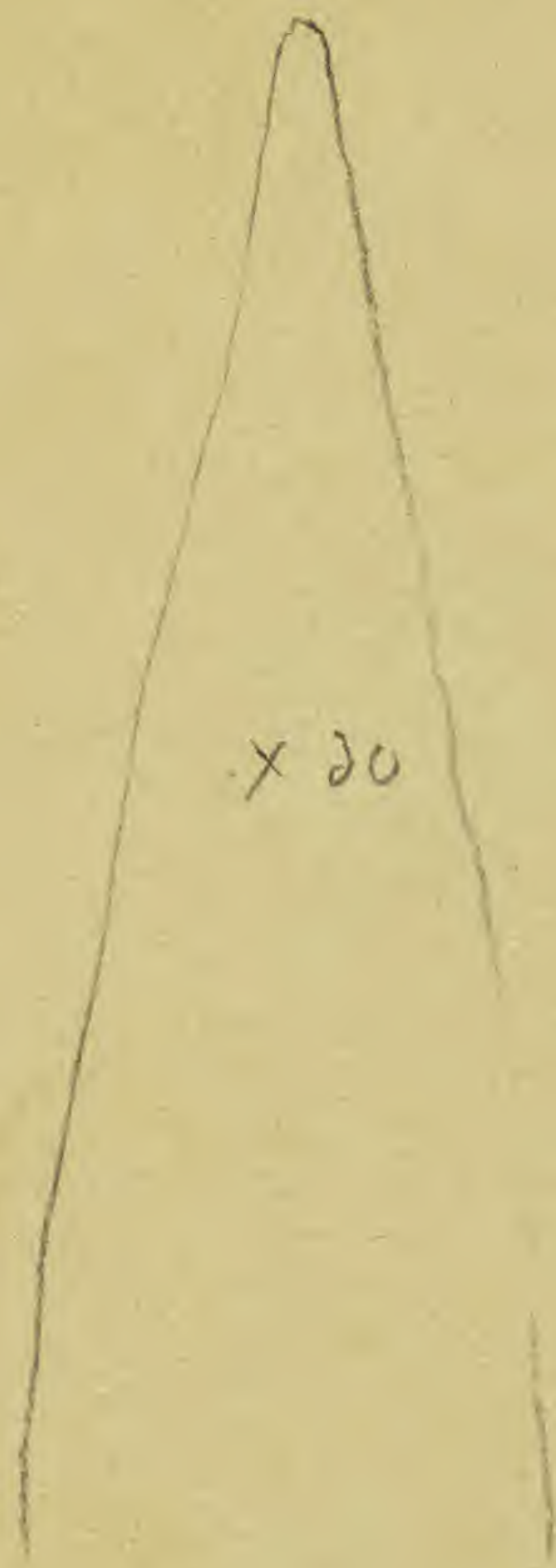
x70



Ducts inferior or parenchyma  
mostly hypoderm <sup>bundles</sup> between them and the  
epidermis

Large bundles of hypoderm in  
angles and along epidermis  
also within sheath

x30



x60



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May 30 1878

*P. aspera*

Ekrenburg

in Hb Berlin

*P. holoo*



hypoderm - bundles  
in the corner, some at  
under-epiderm; - a few  
within sheath

no ducts, or a single  
one near sheath -  
uniting through hypoderm  
bundle with periphery

x 60



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6

$\frac{4}{1}$

7

8

6

Ovary



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